

CLAIMS:

1. Breaking detector for a shear pin having a central bore, comprising:

5 an electrically conductive element forming an elongated loop extending on a length of the bore of the shear pin and having upper ends defining contact surfaces adjacent each other;

10 an electrically insulating element extending in the loop;

power supply cables connected respectively to the contact surfaces and provided with connectors; and

15 an electrically insulating means for removably supporting the elements of the detector in the bore of the shear pin.

2. The detector according to claim 1, comprising:

20 an identification circuit having a light indicator connected between the contact surfaces, the light indicator projecting at an upper end of the means for supporting.

3. The detector according to claim 2, wherein the identification circuit comprises a resistor in series with an electroluminescent diode.

25

4. The detector according to claim 3, wherein the means for supporting comprises a tube insertable in the bore of the shear pin, and a cap mountable at an upper end of the tube, the elements of the detector extending in the tube, 30 and the cap having a top opening for passage of the power supply cables.

5. The detector according to claim 4, wherein the electroluminescent diode projects on top of the cap.

6. The detector according to claim 5, wherein the
5 tube is made of plastic material.

7. The detector according to claim 5, wherein the conductive element and the insulating element are formed by a printed circuit disposed in the tube, the printed circuit
10 having a conductive strip on each side of a central insulating strip in order to form the elongated loop.

8. The detector according to claim 7, comprising an insulating material injected in the tube, consolidating the
15 printed circuit and the tube together.

9. The detector according to claim 8, wherein the connectors of the power supply cables comprise respectively complementary male and female connectors.

20

10. The detector according to claim 7, wherein the conductive strip has upper ends forming connection terminals on each side of the insulating strip, the connection terminals providing the contact surfaces at the ends of the
25 conductive element.

11. The detector according to claim 1, wherein the means for supporting comprises a tube insertable in the bore of the shear pin, the elements of the detector extending in
30 the tube.

12. The detector according to claim 11, wherein the tube is made of plastic material.

13. The detector according to claim 11, comprising an insulating material injected in the tube.

5 14. The detector according to claim 1, wherein the conductive element and the insulating element are formed by a printed circuit having a conductive strip on each side of a central insulating strip in order to form the elongated loop.

10 15. The detector according to claim 14, wherein the conductive strip is made of copper.

15 16. The detector according to claim 14, wherein the conductive strip has upper ends forming connection terminals on each side of the insulating strip, the connection terminals providing the contact surfaces at the ends of the conductive element.

20 17. The detector according to claim 1, wherein the connectors of the power supply cables comprise respectively complementary male and female connectors.

25 18. A system for detecting breaking of shear pins having respective central bores, comprising:

 a number of detectors according to claim 1 connected in series with one another by their connectors, the detectors being respectively inserted in the bores of the shear pins;

30 a power supply source connected in series with the detectors; and

 a warning element connected between the source and the detectors, responsive to a breakage of the conductive

element of one of the detectors caused by a breaking of a corresponding one of the shear pins.

19. The system according to claim 18, wherein each
5 detector comprises an identification circuit having a light indicator connected between the contact surfaces of the electrically conductive element, the light indicator projecting at an upper end of the means for supporting.